



# HF Happenings

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the week of 18 April 2016

## The Quarterly SARC and ICASA Meeting

The SARC and ICASA quarterly liaison meeting held this past week discussed several regulatory issues. The SARC 5 MHz report and proposal for the way forward was discussed and is receiving attention by the frequency spectrum and licensing departments. The next step is to submit the SARC request to the ICASA Executive and Council.

The exemption of amateur radio equipment was discussed and the SARC and ICASA will be meeting in the next month to discuss how best to deal with the issue and what type of equipment should be exempted from type approval. ICASA expects to release a discussion paper around August. It is expected public hearings will be held during September.

A full report on the meeting will be available in the next two weeks and published in the April letter to SARC members. The SARC was represented by Hans van de Groenendaal ZS6AKV, Fritz Sutherland, ZS6SF, and Geoff Levey, ZS6C.

## New Amateur Radio video

Amateur radio is a hobby with so many aspects it can be hard to describe and difficult to know what to try first. The Radio Society of Great Britain's (RSGB) new video gives you a taster of just some of the many exciting, challenging and fun things you can do. You can see the video on the RSGB website via [www.rsgb.org/main](http://www.rsgb.org/main) or via the RSGB's YouTube channel. The Society will take a look at other parts of the hobby in future videos.

## Radio Amateur heard Titanic's call for help

The *South Wales Argus* tells the story of Artie Moore, MNX, who in 1912 picked up the distress signal from the Titanic. Artie Moore was born in 1887, Queen Victoria was still on the throne and he lived in a 17<sup>th</sup> century water mill. However, his fascination for the very modern technology of wireless communication meant that on the night of 15 April 1912 when a disaster occurred which would be known across the world, it would change his life forever.



Read the story at [www.southwalesargus.co.uk/news/14428359.THE\\_LONG\\_VIEW](http://www.southwalesargus.co.uk/news/14428359.THE_LONG_VIEW)

[The Blackwood man who heard the Titanic's call for help/](#)

## Results of the 2016 SARC 40 m Hamnet Contest

The contest committee received eight logs and two check logs for the Hamnet 40 metre Contest.

### Single Operator Portable

1<sup>st</sup> Al Akers, ZS2U 128 points

### Multi-operator Portable

1<sup>st</sup> Dave Higgs, ZS2DH, 6 points



South African Radio League \* Suid-Afrikaanse Radioliga  
Member Society of the International Amateur Radio Union since 1925



### Single Operator Base

- 1<sup>st</sup> East Rand Branch, ZS6ERB 1 224 points
- 2<sup>nd</sup> Johan van Zjil, ZS4DZ, 980 points
- 3<sup>rd</sup> Theuins Potgieter, ZS2EC, 792 points
- 4<sup>th</sup> Charly du Pont, ZS5DU, 60 points
- 5<sup>th</sup> Bill Hodges, ZS2ABZ, 440 points
- 6<sup>th</sup> Pam Momberg, ZS6APT, 232 points

### Results of the 2015 CQ DX SSB Contest

The April 2016 issue of CQ Magazine carries the results of the 2015 CQ DX SSB Contest and Southrn Africa was well represented. Call signs in **bold** are certificate winners.

#### Angola

Igor L. Korovin, **D3AM** (low power, all bands) 201 900 points

#### Mozambique

Karel Niewenhuis, **C91C** (all bands) 525 252 points  
Luis Tomás, **C91TDD** (low power, all bands) 25 179 points

#### South Africa

Sidney Smith, **ZS1TMJ** (all bands) 959 107 points  
Roger Jones, ZS6RJ (all bands) 871 357 points  
Wessie Wessels, ZS1VV (all bands) 474 208 points  
Ulric Staffen, ZS2ABE (all bands) 40 950 points  
Oleg Neruchev, **ZS9Z** (28 MHz) 265 318 points (op ZS1OIN)  
Barry Nugent, **ZS2NF** (low power, all bands) 149 400 points  
Janusz Danilowicz, ZS1BHQ (low power, all bands) 38 376 points  
Richard Hooper, ZS6RKE (low power, all bands) 1 456 points  
Theunis Potgieter, ZS2EC (low power, all bands) 323 points  
Stephen van Jaarsveld, **ZS6SVJ** (low power, 14 MHz) 35 points  
Karel Bezuidenhout, ZS6WN (all bands, assisted) 339 360 points  
Pierre van Deventer, **ZS6A** (28 MHz, assisted) 17 794 points  
Gary Potgieter, ZS5NK (21 MHz, assisted) 16 704 points  
Geoff Levey, **ZS6C** (low power, all bands, assisted) 46 760 points  
Noel Hammond, ZR6DX (low power, all bands, assisted) 44 323 points

#### Zambia

Peter H. Noda, **9J2JOCV**, (all bands) 390 336 points (op 9J2HN)

### International Marconi Day

Organized by the Cornish Radio Amateur Club, the International Marconi Day (IMD) is a 24-hour amateur radio event held annually to celebrate the birth of Guglielmo Marconi (25 April 1874). It is not a contest, but an opportunity for amateurs around the world to make contacts with historic Marconi sites using HF communications techniques. This year's event will be held

### April

- 2 - **RaDAR Challenge**
- 5 - All schools open
- 7 - **SARL 80 m QSO Party**
- 9 - **SARL Autumn QRP Contest**
- 10 - **SARL Youth Net at 15:00 UTC on 7 070**
- 18 - **World Amateur Radio Day**
- 22 - Earth Day
- 23 - Pesach (1st day)
- 24 - **ZS4 Sprint**
- 25 - **Closing date for May Radio ZS articles**
- 27 - Freedom Day
- 30 - Pesach (8th Day)

### May

- 1 - Worker's Day
- 2 - Public Holiday
- 5 - Ascension Day
- 7 and 8 - AWA Valve QSO Party
- 8 - **Mothers Day; SARL Youth Net at 15:00 UTC on 7 070**
- 12 - **Radio Amateur Examination**
- 15 - **ZS3 Sprint**
- 20 to 22 - Dayton Hamvention
- 23 - **Closing date for June Radio ZS articles**
- 25 - Africa Day
- 29 - **SARL Digital Contest**

on 23 April, from 00.00 UTC to 23.59 UTC. Details, including information on the relevant Award Certificates and the listing of participating stations, can be found at <http://gx4crc.com/>.

The Kerry Amateur Radio Group will participate as an Award Station in this year's International Marconi Day event on 23 April. The station will be set up the site of the former Marconi Station at Ballybunnion. Members of the Expeditionary Radio Team will operate from 00.01 to 23.59 UTC on the 23rd. Two HF stations are planned, using EI6YXQ to commemorate the original call sign, YXQ, used for the first transatlantic voice radio transmission in March 1919.

OE16M will be on the air from 22 to 24 April as part of the Marconi Day celebrations. This is also an official International Marconi Day station and contacts on 23 April count for awards. QSL via the bureau to OE1WHC.

## 2016 UK/EI DX SSB Contest

Dates have now been released for the 2016 UK/EI DX SSB Contest (it is the week before CQ WW in October) and for all future UK/EI DX contests through to 2022. See list here for details <http://www.ukeicc.com/which-contest/uk-ei-dx-contests-dates>

Steve, GW4BLE, on behalf of the UKEICC Team [www.UKEICC.com](http://www.UKEICC.com)

## Brazil Eases Authorization for Radio Amateurs Attending the 2016 Summer Olympics

IARU Region 2 News Editor Joaquin Solana, XE1R, reports that radio amateurs hoping to operate in Brazil during the 2016 Olympic Games in Rio this summer are in luck and will be able to be on air without bureaucracy.

During August and September any foreign radio amateur will be able to operate in Brazil, whether or not a reciprocal agreement between the respective countries exists. No IARP or CEPT license is necessary and no fees are required. The Brazilian Amateur Radio League LABRE has obtained permission from ANATEL, the Brazilian telecommunications regulator, to handle authorizations. Amateurs who want to operate in Brazil should send LABRE:

- \* A copy of a valid passport (identification pages)
- \* A copy of the applicant's Amateur Radio license
- \* A list of cities in which the radio amateur plans to operate and the respective dates
- \* An e-mail address

Send scanned documents to LABRE via e-mail at [executiva@labre.org.br](mailto:executiva@labre.org.br).

## African DX

Africa DX Net - every Saturday afternoon from 14:00 UTC on 14,260 MHz hosted by Mike, V51MA, Leon, A25SL, and Tinus, ZS6MHK.

Democratic Republic of Congo. Elvira, IV3FSG will be active from the Democratic Republic of Congo for one month. She will operate SSB, RTTY and PSK31 on 80 to 10 metres as 9Q0HQ/1 (22 to 30 April) and 9Q0HQ (1 to 22 May). QSL for this operation via IK3GES. Log search on Club Log.

Guinea, 3X. Michael, PA5M will be active during the next two months as 3XY5M on HF and 6 m. QSL via PA5M, ClubLog OQRS.

Congo Republic. Philippe, F5MVB and Joel, F5AOW are



planning to be active as TN2MP and TN2BJ respectively from the Congo Republic sometime in April or May. Exact dates are still to be confirmed.

## African Islands

IOTA frequencies

CW: 28 040 24 920 21 040 18 098 14 040 10 114 7 030 3 530 kHz

SSB: 28 560 28 460 24 950 21 260 18 128 14 260 7 055 3 760 kHz



Rodriguez Island, 3B9. Olof, GOCKV, will once again be active as 3B9HA from Rodrigues Islands (AF-017) during the CQ WW DX CW Contest (26 and 27 November) as a Single-Op/All-Band entry. QSL via LoTW.

## The Great Northern Way, R3CA/O

"The Great Northern Way" expedition is now progressing eastward along the coast of Yakutia to Chukotka. Depending on local conditions, there are plans to operate from several islands - the first one is expected to be Bol'shoy Begichev (AS-152). Other IOTA groups mentioned are AS-082, AS-163, AS-029, AS-164 and AS-070. On 18 April, UA9OBA will join the expedition, whose progress can be followed on [www.ec-arctic.ru](http://www.ec-arctic.ru).

## The Doctor Is In

Sponsored by DX Engineering, "The Doctor Is In" has launched a twice-monthly podcast in addition to the *QST* magazine column of the same name. You will be able to listen to community-submitted technical questions answered by Joel Hallas, W1ZR, and Steve Ford, WB8IMY.

The 20 minute episodes are available via iTunes

<https://itunes.apple.com/us/podcast/arrl-the-doctor-is-in/id1096749595?mt=2>, Stitcher

<http://app.stitcher.com/> and Blubrry [https://www.blubrry.com/arrl\\_the\\_doctor\\_is\\_in/](https://www.blubrry.com/arrl_the_doctor_is_in/) or via "The Doctor Is In" webpage <http://arrl.org/Doctor>. The first episode (7 April) features HF Vertical Antennas.

## Word to the Wise

OTRSP - Open Two Radio Switching Protocol [www.k1xm.org/OTRSP/OTRSP\\_Protocol.pdf](http://www.k1xm.org/OTRSP/OTRSP_Protocol.pdf)

A specification of commands and responses involved in controlling SO2R devices. As early SO2R devices were originally controlled by manipulating PC parallel ports. Unfortunately, parallel ports are generally no longer found on PCs. OTRSP was developed to abstract the control of SO2R devices from the underlying interfaces. The YCCC SO2R box implements OTRSP <http://www.k1xm.org/SO2R/index.html>.

## Operating Tip

Hourly Rate Plan. Before you enter the next contest, why not study the results from past years to inform your operating plan? Check out your results from last year; know how many contacts you made each contest hour, and on what bands. If propagation is worse this year, factor that into your potential band usage. Study the results of other stations in your area to understand what they did right, and learn from them. Sometimes actual logs are available from the contest sponsors after the contest. Occasionally, stations publish hourly rates in their 3830 summaries. Once you have your goals hour-by-hour, you can enter that information into some loggers (such as N1MM Logger+) where it will be displayed during the contest.

## Technical Web Site of the Week - <http://k6tu.net/?q=TerrainProfiles>

You have heard about terrain analyses and you know you should probably do them to better understand your shack's location - Stu's website can step you though everything you need to do to get going with N6BV's High Frequency Terrain Analysis (HFTA) program <http://k6tu.net/?q=TerrainProfiles>. K6TU's website will even assist with the tedious part, the generation of the terrain profiles for your station location, by automatically pulling data from the National Elevation Dataset or the Shuttle Radar Topography Mission database based on your latitude and longitude. Furthermore, he has built a script to automate the running of HFTA over a 360-degree sweep at your QTH, to generate antenna model files.

## Contest Calendar

This week's contests as compiled by Bruce Horn, WA7BNM. The period covered is 18 to 25 April 2016

### Run for the Bacon QRP Contest

01:00 - 03:00 UTC 18 April

Mode: CW

Bands: 160, 80, 40, 20, 15, 10 m

Classes: Single Band; All Band

Max power: 5 watts

Exchange: RST, state, province or country and member no or power

Work stations: Once per band

QSO Points: 1 point per QSO with non-member; 3 points per QSO with member on same continent; 5 points per QSO with member on different continent

Multipliers: Each state, province, or country once; Multiply mults by 2 if >50 members worked

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 24 April 2016

E-mail logs to: (none)

Upload log at:

<http://qrpcontest.com/pigrun/autolog.php>

Mail logs to: (none)

Find rules at: <http://qrpcontest.com/pigrun/>

### Phone Fray

02:30 - 03:00 UTC 20 April

Mode: SSB

Bands: 160, 80, 40, 20, 15 m

Classes: Single Op

Max power: 100 watts

Exchange: NA: Name and state, province or country; non-NA: Name

Work stations: Once per band

QSO Points: NA station: 1 point per QSO; non-NA station: 1 point per QSO with an NA station

Multipliers: Each US state (including KH6/KL7) once per band; Each VE province/territory once per band; Each North American country (except W/VE) once per band

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 03:00 UTC 22 April 2016

E-mail logs to: (none)

Post log summary at:

<http://www.3830scores.com>

Mail logs to: (none)

Find rules at:

[http://www.perluma.com/Phone\\_Fray\\_Contest\\_Rules.pdf](http://www.perluma.com/Phone_Fray_Contest_Rules.pdf)

### CWops Mini-CWT Test

13:00 - 14:00 UTC and 19:00 - 20:00 UTC 20 April and 03:00 - 04:00 UTC 21 April

Mode: CW

Bands: 160, 80, 40, 20, 15, 10 m

Classes: Single Op - QRP, low or high

Max power: HP: >100 watts; LP: 100 watts; QRP: 5 watts

Exchange: Member: Name and member no; non-Member: Name and state, province or country

Work stations: Once per band

QSO Points: 1 point per QSO

Multipliers: Each call once

Score Calculation: Total score = total QSO points x total mults

Submit logs by: 04:00 UTC 23 April 2016  
Post log summary at:  
<http://www.3830scores.com>  
Mail logs to: (none)  
Find rules at:  
<http://www.cwops.org/cwt.html>

RSGB 80 m Club Championship, Data  
19:00 - 20:30 UTC 21 April  
Mode: RTTY, PSK  
Bands: 80 m Only  
Classes: (none)  
Exchange: RST and serial no  
QSO Points: 1 point per QSO  
Multipliers: (none)  
Score Calculation: (see rules)  
Submit logs by: 23:59 UTC 28 April 2016  
Upload log at: <http://www.vhfcc.org/cgi-bin/hfenter.pl>  
Mail logs to: (none)  
Find rules at:  
<http://www.rsgbcc.org/hf/rules/2016/r80mcc.shtml>

NCCC RTTY Sprint  
01:45 - 02:15 UTC 22 April  
Mode: RTTY  
Bands: (see rules)  
Classes: (none)  
Exchange: Serial no, name and QTH  
Score Calculation: Total score = total QSO points x total mults  
Submit logs by: 24 April 2016  
E-mail logs to: (none)  
Post log summary at:  
<http://www.3830scores.com/>  
Mail logs to: (none)  
Find rules at:  
<http://www.ncccsprint.com/rttyns.html>

NCCC Sprint  
02:30 - 03:00 UTC 22 April  
Mode: CW  
Bands: (see rules)  
Classes: (none)  
Exchange: serial no, name and QTH  
Score Calculation: Total score = total QSO points x total mults  
Submit logs by: 24 April 2016  
E-mail logs to: (none)

Post log summary at:  
<http://www.3830scores.com/>  
Mail logs to: (none)  
Find rules at:  
<http://www.ncccsprint.com/rules.html>

10-10 International Spring Digital Contest  
00:01 UTC 23 April to 23:59 UTC 24 April  
Mode: Digital  
Bands: 10 m Only  
Classes: Individual; Club; QRP  
Max power: non-QRP: >5 watts; QRP: 5 watts  
Exchange: 10-10 Member: Name, 10-10 number and state, province or country; Non-Member: Name, 0 and state, province or country  
QSO Points: 1 point per QSO with a non-member  
2 points per QSO with a 10-10 member  
Multipliers: (none)  
Score Calculation: Total score = total QSO points  
Submit logs by: 9 May 2016  
E-mail logs to: [tentencontest@ten-ten.org](mailto:tentencontest@ten-ten.org)  
Upload log at:  
<http://www.hamclubs.info/scorer/>  
Mail logs to: Dan Morris, KZ3T, 3162 Covington Way, Lenoir, NC 28645, USA  
Find rules at: <http://www.ten-ten.org/index.php/activity/2013-07-22-20-26-48/qso-party-rules>

SP DX RTTY Contest  
12:00 UTC 23 April to 12:00 UTC 24 April  
Mode: RTTY  
Bands: 80, 40, 20, 15, 10 m  
Classes: Single Op All Band - QRP, low or high; Multi-Single; Multi-Multi; SWL  
Max power: HP: >100 W; LP: 100 W; QRP: 5 W  
Exchange: SP: RST and 1-letter province; Non-SP: RST and QSO no  
Work stations: Once per band  
QSO Points: 2 points per QSO with same country; 5 points per QSO with different country same continent; 10 points per QSO with different continent  
Multipliers: Each SP province once per band; Each DXCC country once per band; Each continent once

Score Calculation: Total score = total QSO points x total DXCC/province mults x continent mults  
Submit logs by: 8 May 2016  
E-mail logs to: [sprtty@pzk.org.pl](mailto:sprtty@pzk.org.pl)  
Upload log at:  
[http://www.pkrvg.org/spxrtty\\_import.html](http://www.pkrvg.org/spxrtty_import.html)  
Mail logs to: (none)  
Find rules at:  
[http://www.pkrvg.org/strona\\_spdxrttyen.htm](http://www.pkrvg.org/strona_spdxrttyen.htm)  
!

Helvetia Contest  
13:00 UTC 23 April to 12:59 UTC 24 April  
Mode: CW, SSB, Digital  
Bands: 160, 80, 40, 20, 15, 10 m  
Classes: Single Op - CW, SSB, mixed or digital; Single Op QRP Mixed; Multi-Op - CW, SSB, mixed or digital; SWL  
Max operating hours: 18 with a maximum of two rest periods of any length  
Exchange: HB: RS(T), serial no and 2-letter canton; non-HB: RS(T) and serial no  
Work stations: Once per band  
QSO Points: HB Stations: 1 point per QSO with Europe; HB Stations: 3 points per QSO with non-Europe; non-HB Stations: 3 points per QSO with HB  
Multipliers: HB Stations: Each canton once per band; HB Stations: Each DXCC country once per band; non-HB Stations: Each canton once per band

Score Calculation: Total score = total QSO points x total mults  
Submit logs by: 9 May 2016  
E-mail logs to: [contest@uska.ch](mailto:contest@uska.ch)  
Mail logs to: Dominik Bugmann, HB9CZF, Im Geeren 27a, 8112 Otelfingen, Switzerland  
Find rules at:  
<http://uska.ch/fileadmin/download/Contest/KW/1-static/KW120101e.pdf>

BARTG Sprint 75  
17:00 - 21:00 UTC 24 April  
Mode: 75 Baud RTTY  
Bands: 80, 40, 20, 15, 10 m  
Classes: Single Op Expert; Single Op All Band  
Exchange: Serial no  
Work stations: Once per band  
QSO Points: 1 point per QSO  
Multipliers: DXCC countries once regardless of band; JA, W, VE and VK areas once regardless of band  
Score Calculation: Total score = total QSO points x total mults x continents  
Submit logs by: 1 May 2016  
Upload log at: <http://bartg.rsgbcc.org/cgi-bin/hfenter.pl>  
Mail logs to: (none)  
Find rules at:  
<http://s3.spanglefish.com/s/7850/documents/contests/sprint75/rules/current/bartg%20sprint%2075%20rules.pdf>

## Next Week's Contests

SKCC Sprint, 00:00 - 02:00 UTC 27 April  
Phone Fray, 02:30 - 03:00 UTC 27 April  
CWops Mini-CWT Test, 13:00 - 14:00 UTC and 19:00 - 20:00 UTC 27 April and 03:00 - 04:00 UTC 28 April  
UKEICC 80 m Contest, 20:00 - 21:00 UTC 27 April  
NCCC RTTY Sprint, 01:45 - 02:15 UTC 29 April  
NCCC Sprint, 02:30 - 03:00 UTC 29 April  
Russian WW MultiMode Contest, 12:00 UTC 30 April to 11:59 UTC 1 May  
Florida QSO Party, 16:00 UTC 30 April to 01:59 UTC 1 May 12:00 UTC-21:59 UTC 1 May  
AGCW QRP/QRP Party, 13:00 - 19:00 UTC 1 May  
RSGB 80 m Club Championship, SSB, 19:00 - 20:30 UTC 2 May  
ARS Spartan Sprint, 01:00 - 03:00 UTC 3 May

# VHF Happenings

## **ISS SSTV in Motherboard**

The online magazine *Motherboard* has published an article about the Slow Scan TV transmissions, which have been taking place from the International Space Station this week. Motherboard interviews radio amateur Ryan Reynolds about the transmissions and include an image he received from a previous SSTV session. Read the article at <http://motherboard.vice.com/read/the-iss-is-sending-tv-signals-to-amateur-radio-nerds>

## **50 MHz Marathon**

Gabriele, IZ5HQB, says, "The ARI Florence organizes a marathon dedicated to the 50 MHz band which is open to all amateurs. To participate simply request the user ID and password by sending an e-mail to [maratona50mhz@gmail.com](mailto:maratona50mhz@gmail.com) containing the following information - Call, operator name, WW Locator and the category of participation. All of the regulations and the details are available at <http://www.arifirenze.it/maratona>

## **AMSAT SA Space Symposium to Feature how to get ready for the first Amateur Geostationary Satellite**

If all goes according to plan the Qatar Satellite Company's second satellite, Es'hail-2, will be placed in a geostationary orbit by a Space-X rocket in December 2016. It will carry an AMSAT linear transponder as a secondary payload, giving amateurs for the first time access to a geostationary satellite. The transponder uplink frequency will be 2,4 GHz, downlink frequency 10,489 GHz and the bandwidth 250 kHz. Hannes Coetzee, ZS6BZP, will present at the AMSAT SA space symposium a paper on how to get ready for the first amateur Radio geostationary satellite. The operational parameters of the transponder are analysed and possible technical solutions for the up- and downlink requirements are presented. Emphasis will be placed on low cost equipment in the best Ham tradition.

Book now for the event, which will be held on 28 May at the Innovation Hub in Pretoria. Visit [www.amsatsa.org.za](http://www.amsatsa.org.za) for more details and the registration form. Discounted early bird registration for SARL and AMSAT SA members is available.

## **Is there any life in outer space?**

In ancient times people believed that our Earth was at the centre of the Universe with the stars, Sun and the Moon orbiting around it. However, this attitude started to change after Galileo first pointed his small telescope into the night sky. Our solar planets are not alone anymore; over 2 000 exoplanets have been confirmed out of about 6 000 discovered so far in our galaxy, the Milky Way. Our star, the Sun, is 4,5 billion years old and there are an estimated 200 billion other stars in our galaxy where some are millions of years older. If life had also started on some of those older exoplanets then they could be more advanced than we could.

Let us imagine that there could be aliens out there who have also played around with radio in their distant past, and then some of those signals could only reach us now or are still on their way. This is why SETI, Search for Extra Terrestrial Intelligence, have embarked on a more advanced programme this year to search for alien radio signals with two of the largest radio telescopes in the world, and a sponsorship of 100 million dollars. They will be exploring the frequency spectrum from 1 - 10 GHz, a wavelength of 30 to 3 cm, which is the quietest part of the entire radio spectrum. If they are not successful, then hopefully, when our Square Kilome-

tre Array in the Karoo with its 3 000 dishes come on stream in 2024, it might make history and discover the elusive weak alien radio signals in our Milky Way. A CQ DX from outer space!

### Print an Antenna

The European Space Agency used a 3D printer to fabricate a 14,5 GHz satellite antenna [http://www.designnews.com/author.asp?section\\_id=1392&doc\\_id=280212](http://www.designnews.com/author.asp?section_id=1392&doc_id=280212). After printing the part, it was coated with copper to give it its electrical properties. This might provide some ideas for methods to "print" other signal-chain items for UHF+ frequencies, for example interdigital filters.

### Next Week's Contests

432 MHz Spring Sprint, 19:00 - 23:00 local 27 April

SBMS 2,3 GHz and Up Contest and Club Challenge, 06:00 local 30 April to 23:59 local 1 May

Items used with acknowledgement to the ARRL Letter, the ARRL DX News, the ARRL Contest Update, OPDX Bulletin, 425 DX Bulletin, DXNL Newsletter, WIA-News, the RSGB News, DxCoffee, Southgate ARC News, DX World and the Amateur Radio Newsletter

You can now download your copy of HF Happenings from [www.sarl.org.za/hf\\_happenings.asp](http://www.sarl.org.za/hf_happenings.asp).